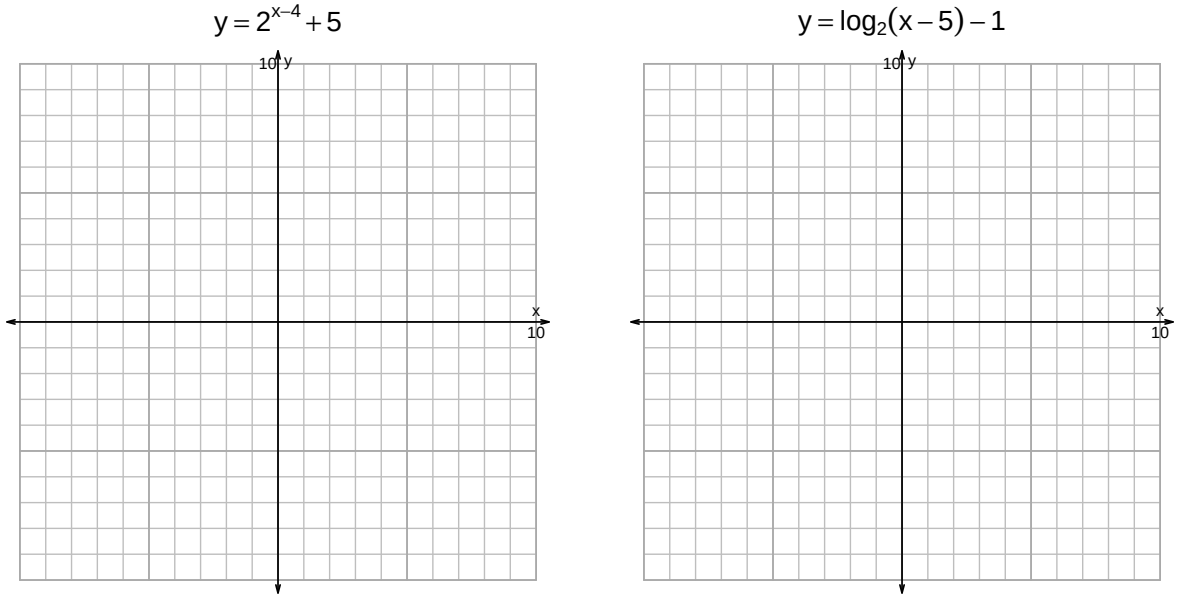
Name: Date:

s18: EXP LOG (QUIZ v367)

1. (10 pts) Graph $y = 2^{x-4} + 5$ and $y = \log_2(x-5) - 1$ on the grids below. Also, draw any asymptotes with dashed lines.

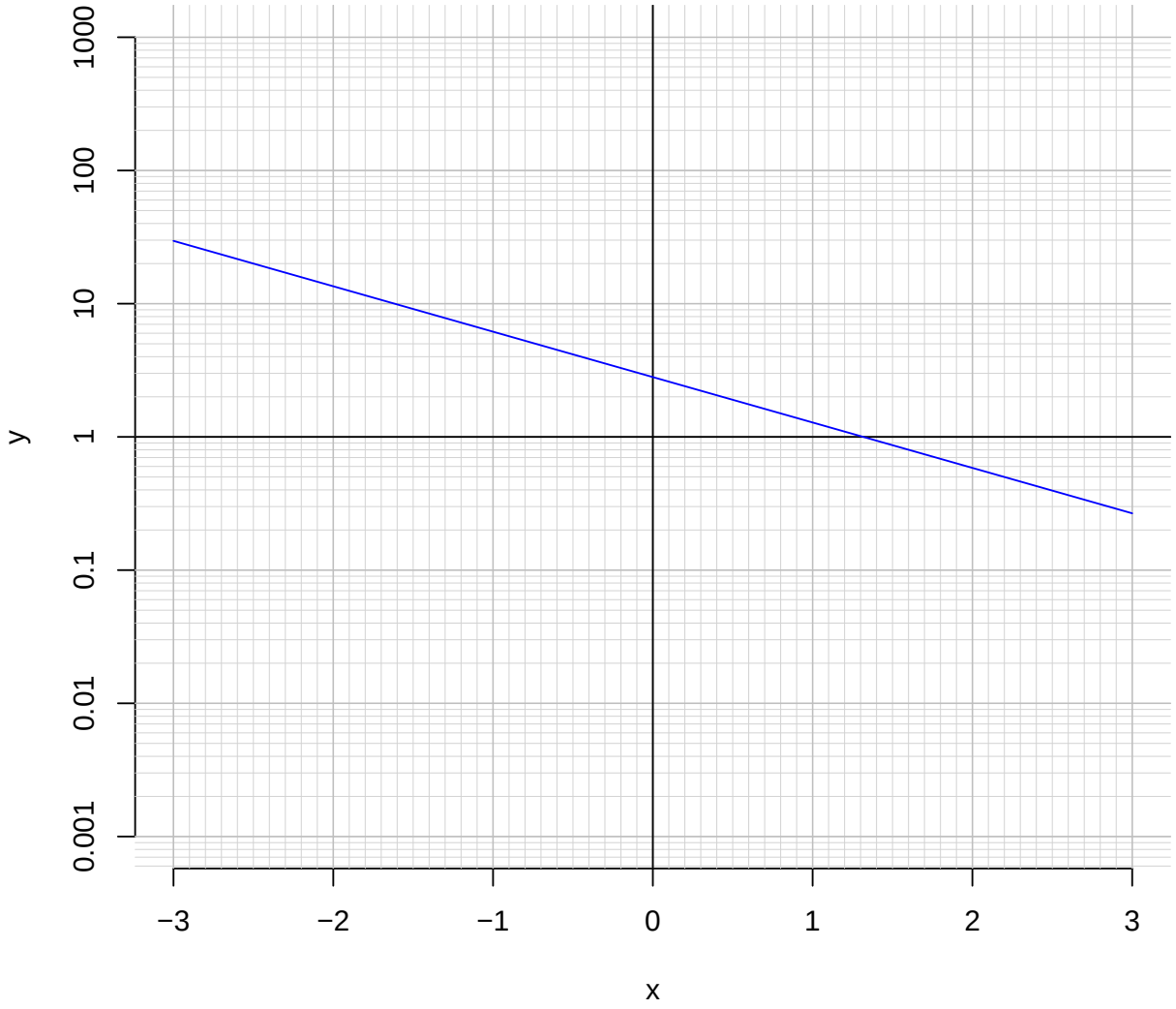


Somewhat useful hint: $2^3 = 8$*, and thus* $\log_2(8) = 3$.

2. (10 pts) Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression. Please do not do any arithmetic; just move numbers around.

$$-23 = \left(\frac{-7}{4}\right) \cdot 2^{5t/3}$$

3. (10 pts) An exponential function $f(x) = 2.81 \cdot e^{-0.785x}$ is graphed below on a semi-log plot.



a. Using the plot above, evaluate $f(2.2)$.

b. The inverse function is logarithmic.

$$f^{-1}(x) = \frac{-1}{0.785} \cdot \ln\left(\frac{x}{2.81}\right)$$

Using the plot above, evaluate $f^{-1}(20)$.